

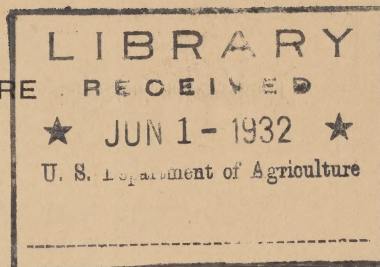
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UNITED STATES DEPARTMENT OF AGRICULTURE
BUREAU OF PLANT INDUSTRY
COOPERATING WITH
STATE AGRICULTURAL AND OTHER AGENCIES
IN THE ERADICATION OF THE COMMON BARBERRY
WASHINGTON, D. C.

DIVISION OF
BARBERRY ERADICATION



Reply to:
Box 72
Urbana, Illinois

As an Illinois member of the National Rust Busters Club you will be interested in this brief 1931 report of the progress of the barberry eradication campaign in which you have participated. Please show this report to others when you are through with it.

Should you find additional common barberry bushes during this spring and summer they may be reported direct to this office. You can also render a service by helping any of your friends to find and report barberry bushes. Medals like the one you have are available for other boys and girls who qualify for membership in the National Rust Busters Club.

Very truly yours,

Robert W. Bills

Robert W. Bills
Agent in Charge, Barberry
Eradication in Illinois



Common Barberry

The common barberry (*Berberis vulgaris* L.) and many closely related varieties harbor stem rust of small grains and should be destroyed.

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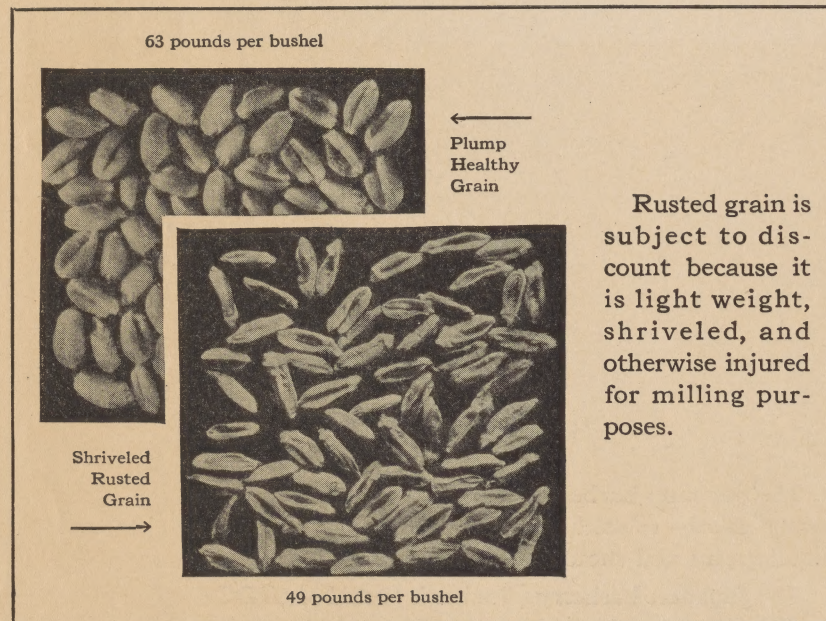


Japanese Barberry

STEM-RUST CONTROL REQUIRES BARBERRY ERADICATION

HOW STEM RUST REDUCES YIELD PER ACRE AND AFFECTS QUALITY OF GRAIN

Stem rust appears on barberry during early spring months, later spreads to near-by wheat, oats, barley, and rye, steals the plant food and weakens the straw



Stem rust losses decrease as barberry eradication progresses

57,704,000 bushels of wheat

Average annual loss five-year period 1916-1920

17,867,000 bushels of wheat

Average annual loss five-year period 1921-1925

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Average annual loss five-year period 1926-1930

More than 18 million common barberry bushes have been destroyed in 13 North-Central States since 1918

WHERE COMMON BARBERRY BUSHES ARE FOUND AND HOW TO ERADICATE THEM

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All common barberry bushes in the north-central part of the United States should be destroyed to prevent rust epidemics

REPORT *the* LOCATION of COMMON BARBERRY BUSHES to your STATE AGRICULTURAL COLLEGE

PROGRESS OF BARBERRY ERADICATION CAMPAIGN IN ILLINOIS
1931

More than 16,400 common barberry bushes were destroyed in Illinois in 1931. Most of these were centered near Aurora, Downers Grove, Dixon, Galena, Lake Forest, La Salle and Port Byron in five northern Illinois counties. At the completion of the 1931 field season, a total of 2,597,406 bushes had been destroyed in this State since the beginning of the barberry eradication campaign in 1918. Thus, it can be seen that steady progress is being made in the extermination of these bushes, known for years to harbor black stem rust of oats, wheat, barley and rye.

The effect barberry eradication is having upon stem rust losses is graphically illustrated on the inside of this folder and may be further verified by reviewing the experiences of many farmers who have had little, if any rust damage since barberry bushes were removed from the vicinity of their farms.

Agents employed by the State and Federal Departments of Agriculture made a careful search over more than 1,200 square miles of territory during the past field season. Many of the 16,400 barberry bushes eradicated were found to have developed from seed scattered by birds and were growing in out-of-the-way places, often near grain fields. It is these scattered bushes which make the final extermination of this pest so difficult. Rocky creek banks, fence lines, timber pastures and unused cutover areas are favored locations for the wild bushes.

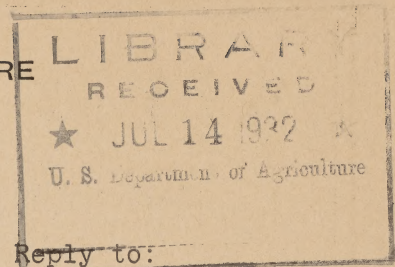
In 1931 weather conditions in Illinois were favorable for the development of rust on small grains and the oat crop in the northern counties where barberry bushes are numerous was heavily infected with the disease. In southern Illinois most of the barberry bushes have been eradicated and very little rust injury has occurred during the past few years.

Children enrolled in rural and city schools, members of boys and girls clubs, and many people belonging to other juvenile and adult organizations, have cooperated in the eradication program. Eighty-seven children of school age and many adults reported the location of rust-spreading bushes to the Department of Agriculture. Continuance of this interest will hasten the completion of the work and is greatly desired to supplement the activities of Department of Agriculture field men.

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WASHINGTON, D. C.

DIVISION OF
BARBERRY ERADICATION



Purdue Experiment Station Annex
West Lafayette, Indiana

Dear Sir:

Reliable estimates indicate that a single common barberry bush in 1922 was responsible for a loss of more than \$50,000 to Decatur County farmers. Weather conditions that year were favorable for the development of stem rust on the barberry, and, for the rapid spread of the disease once it reached the growing grain crops. When this bush was found in June, 1922, it bore evidence of having been heavily infected with stem rust in the spring.

The rust is a parasite that depends for its development upon plant food taken from the stems of the grain. If the grain stalks become badly rusted, very little sap can reach the head, resulting in light-weight, shriveled kernels. Rust reduces both the yield and quality of the grain. The rust spores, or reproductive bodies of the disease, may be carried by the wind for miles from the common barberry bushes where they are produced. A common barberry bush infected with rust is, therefore, a menace to small grain crops whether it is growing on a city lawn, in a farmyard, in woodlands, pastures, or along creeks.

You can assist in this plant disease control program by reporting to the Barberry Eradication office the location of common barberry bushes or areas where stem rust has damaged grain crops.

Your cooperation will be greatly appreciated.

Very truly yours,

Wayne E. Leer,
Agent in Charge,
Barberry Eradication in Indiana.



Common Barberry

The common barberry (*Berberis vulgaris* L.) and many closely related varieties harbor stem rust of small grains and should be destroyed.

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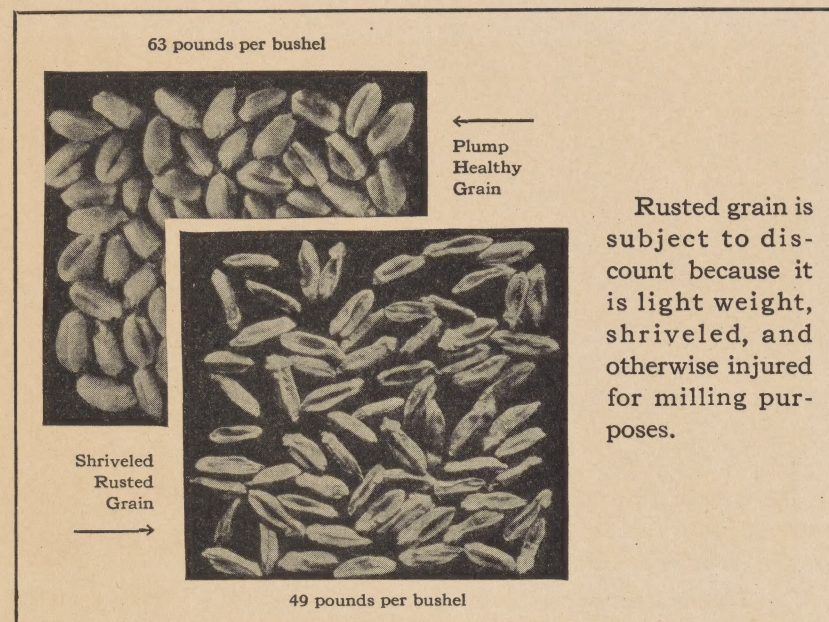


Japanese Barberry

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WHERE COMMON BARBERRY BUSHES ARE FOUND AND HOW TO ERADICATE THEM

Common barberry bushes were originally planted as hedges and ornamental shrubs



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REPORT *the* LOCATION of COMMON BARBERRY BUSHES to your STATE AGRICULTURAL COLLEGE

BARBERRY ERADICATION IN INDIANA - 1931

Every farmer in Indiana is interested in obtaining the highest possible yield per acre when he sows oats, wheat, barley or rye. Black stem rust, which is a preventable plant disease, not only reduces the yield per acre but affects the milling qualities of these crops. Grain shriveled by stem rust is always discounted at the market.

It has been known for many years that black stem rust attacks the common barberry in the spring and from it spreads to small grain crops and certain wild grasses. Eradication of the common barberry as a means of controlling this disease has been advocated in the United States at various times since 1726. It was not, however, until April, 1918, that an organized barberry eradication campaign was begun. At that time the United States Department of Agriculture, in cooperation with State agricultural and other agencies in Colorado, Illinois, Indiana, Iowa, Michigan, Minnesota, Montana, Nebraska, North Dakota, Ohio, South Dakota, Wisconsin and Wyoming began the difficult task of eradicating all of the common barberries in these thirteen States.

The damage to Indiana's small grains due to stem rust is ordinarily restricted to localized areas, depending upon the proximity of common barberry bushes. If weather conditions during the growing season favor the spread of rust, epidemics within the State may be numerous. However, the severity and extent of such local outbreaks depends on moisture and temperature conditions, the stage of development of the grain at the time of initial or subsequent infection and local topography. Several instances have been recorded in which individual farmers or communities of farmers have abandoned attempts to raise wheat on account of the annual recurrence of black stem rust. Often a careful search of areas in which severe local spreads of stem rust have occurred for two or more years results in locating the barberry bushes responsible for the infection.

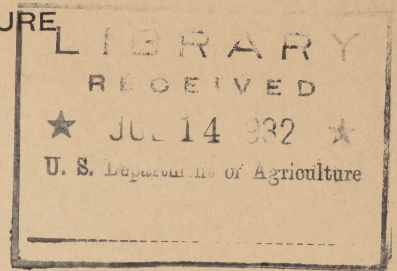
In Indiana the barberry eradication campaign is conducted cooperatively by the Division of Barberry Eradication, Bureau of Plant Industry, United States Department of Agriculture, Purdue University Agricultural Experiment Station, the Conference for the Prevention of Grain Rust, Minneapolis, Minnesota, and several independent organizations. The work is directed in a cooperative way by the Division of Barberry Eradication through a resident representative who is located at the Purdue University Agricultural Experiment Station. Educational institutions from grade schools to colleges and universities, through classroom instruction, have materially aided in bringing about a more general understanding of the relationship of the common barberry to black stem rust. The active participation of property owners in the campaign is steadily increasing as the work progresses.

Since the beginning of the program in 1918 more than 245,000 barberry bushes have been eradicated on 5,474 properties. Of the total number of bushes found in Indiana more than 110,500 or 54% were found growing wild in timbered lots, along creeks and on other uncultivated ground. These bushes had grown from seed scattered by birds or other agencies. During 1931 more than 2,400 barberry bushes and seedlings were found on 63 properties.

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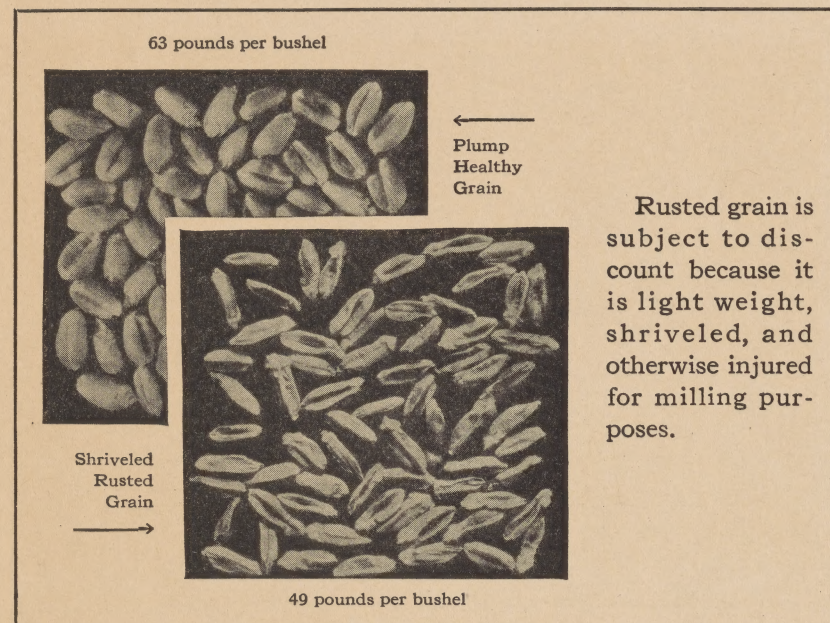


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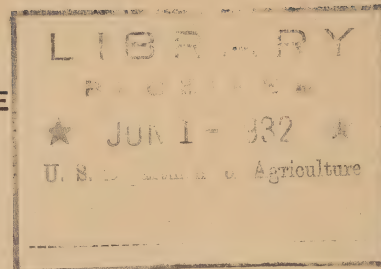
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WASHINGTON, D. C.

DIVISION OF
BARBERRY ERADICATION



Dear Sir:

Reply to:
Barberry Eradication Office
Morrill Hall, I. S. C.
Ames, Iowa

On the reverse side of this pamphlet you will find a report of the progress that was made in barberry eradication during 1931 including a brief summary of the work completed since the beginning of the campaign.

Every effort is being made to acquaint the people of Iowa with the facts regarding the control of black stem rust of small grains. The success of the barberry eradication campaign depends upon the assistance given by property owners and the children of the State in reporting the location of these rust-spreading bushes. During 1931 rural schools in three eastern Iowa counties took up the study of black stem rust of small grains and the pupils learned to identify the rust-spreading barberry. As a result bushes were reported by school pupils on 86 different properties. In addition many bushes have been reported by grain growers who have encountered severe rust damage in the past.

No doubt when you visit the farms in your township you will have an opportunity to observe whether or not barberry bushes are present. Past experiences have shown that many people do not recognize the common barberry when they see it. Farmers in your community will appreciate any information you can give them regarding the source of stem rust and anything that you can do to bring about the reporting of these rust-spreading bushes will greatly benefit the campaign. We will gladly send you such additional information as you may desire relative to this work.

Very truly yours,

A large, stylized handwritten signature in dark ink, appearing to read "D. R. Shepherd".

D. R. SHEPHERD,
Agent in Charge, Iowa.



Common Barberry

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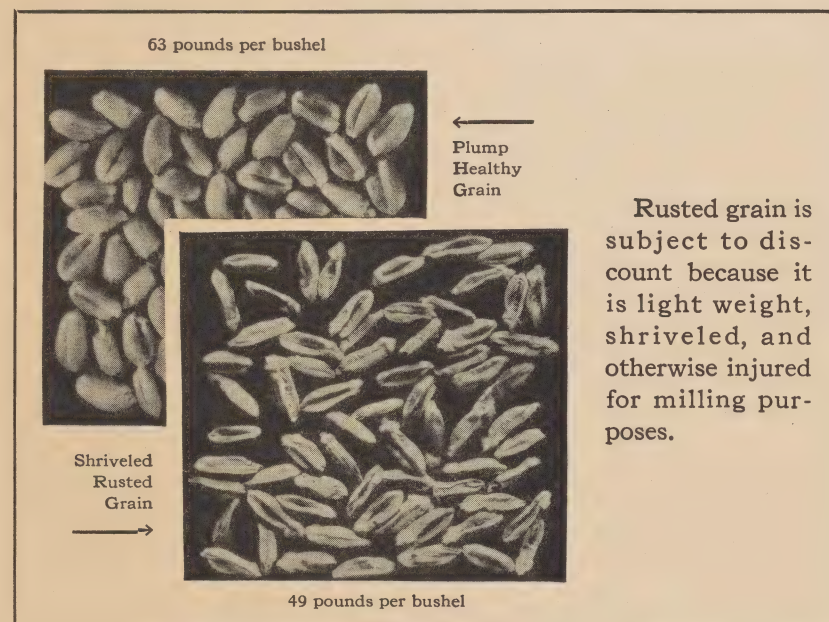


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REPORT *the* LOCATION of COMMON BARBERRY BUSHES to your STATE AGRICULTURAL COLLEGE

PROGRESS OF BARBERRY ERADICATION IN IOWA - 1931.

Since 1918 a campaign has been underway in thirteen of the North-Central and Western grain-growing States to destroy the common (harmful) barberry. Scientists have proven that black stem rust of oats, wheat, barley and rye begins its growth each spring on these bushes and is spread by the wind to small grain crops. The enormous loss suffered from this disease in 1916 climaxed its many years of destructiveness. Some control measure was imperative if small grain growing was to be continued as a profitable enterprise. Thus in 1918 the United States Department of Agriculture, in cooperation with thirteen of the principal small grain-producing States and numerous independent agencies, organized a program to control the disease by destroying its alternate host, the common or European barberry.

Fourteen years of barberry eradication has resulted in the destruction of more than 18,000,000 of these rust-spreading bushes. During the same period there has been a decided reduction in the annual loss from stem rust. In Iowa alone more than 1,000,000 bushes have been destroyed on 13,210 properties. Six thousand eight hundred and forty-five barberry bushes and seedlings were destroyed in 1931.

It is a tremendous task to rid the State of common barberry. Although it is not a native shrub, many have escaped cultivation and are growing in out-of-the-way places. To find barberry bushes which have developed from seed it is necessary to inspect carefully all natural and planted timber, fence rows, and other uncultivated land. Under ideal conditions only a few counties can be covered each year.

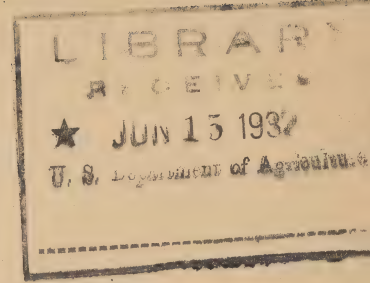
The survey program in 1931 consisted of an intensive farm-to-farm inspection of Carroll, Green, Plymouth, Webster and Woodbury Counties. In addition, many reports received from property owners were investigated. Territory to be worked each year is selected upon the basis of where the largest number of bushes are likely to be found, first attention being given to localities in which small grains are an important crop. The inspection work was supplemented with an intensive informational program intended, first, to build up additional cooperation with property owners and children, and second, as a result of a better understanding on the part of the public to obtain reports of new locations of bushes. By working with normal schools, colleges, rural and city schools, 4-H clubs, and various farmers organizations, an attempt has been made to bring about a better understanding of the relationship between the common barberry and stem rust and to teach people how to distinguish barberry bushes from native and planted shrubbery.

Future work will be similar to that which has been done during the past year. Particular emphasis will be placed upon the educational phase of the program in order that a greater percentage of the people of the State will become sufficiently informed regarding the natural spread of stem rust to take a more active part in the campaign. Continued cooperation on the part of Iowa property owners will greatly benefit future progress in protecting small grain crops from this destructive disease.

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WASHINGTON, D. C.

DIVISION OF
BARBERRY ERADICATION



Reply to:
Barberry Eradication Office
East Lansing, Michigan

Dear Sir:

More than 18,500,000 common barberry bushes have been destroyed in thirteen of the North-Central and Western small grain-producing States since the beginning of the barberry eradication campaign in 1918. The common barberry is the spring host for stem rust of wheat, oats, barley, and rye. Each year this disease decreases the income of farmers of the United States millions of dollars by reducing the yield and injuring the quality of small grain crops.

Until all common barberry bushes in Michigan have been destroyed, local epidemics of stem rust will continue to occur. Although five and one-half million have been destroyed in this State, many scattered bushes remain in wooded areas and along streams and lake shores where seeds have been carried by birds.

In order to locate and destroy the remaining bushes economically it is important that property owners and children learn to know the common barberry and its relation to the occurrence of stem rust. A study of the disease is being made in many of the schools of the State and frequently children report locations of barberry bushes to this office.

On the back page of the pamphlet is a brief summary of the progress that has been made in barberry eradication during the past year. Other materials such as bulletins and posters are available for those wishing further information. Your past interest in this work has greatly benefited the campaign and your further cooperation will be appreciated.

Very truly yours,

A cursive handwritten signature of Francis B. Powers.

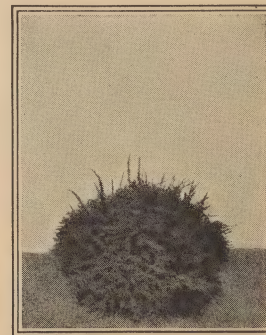
Francis B. Powers
Leader of Barberry Eradication
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63 pounds per bushel



← Plump Healthy Grain

← Shriveled Rusted Grain

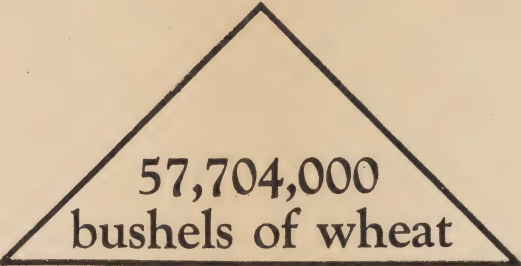


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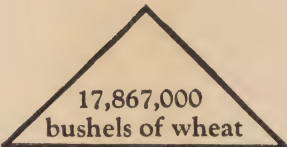
49 pounds per bushel

Rusted grain is subject to discount because it is light weight, shriveled, and otherwise injured for milling purposes.

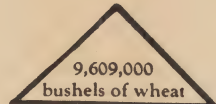
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Average annual loss five-year period 1916-1920



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SOME FACTS CONCERNING THE PROGRESS OF BARBERRY ERADICATION IN MICHIGAN
1931

In 1931, 56,547 common barberry bushes were eradicated in Michigan. Forty-three thousand five hundred of these, the majority of which were growing wild, were found in counties where large fruiting bushes were destroyed earlier in the campaign. To satisfactorily complete eradication of common barberries in Michigan, wooded areas, stream banks and fence lines must be carefully searched.

The common or European barberry bushes are the principal source of early stem rust infection in the northern part of the United States. The eradication of these bushes has become doubly important with the recently acquired knowledge that not only does rust from the barberry leaves attack wheat, oats, barley and rye, but new strains of the disease capable of infecting grains hitherto resistant to stem rust may originate on the barberry leaf. In the 13 North-Central and Western States, cooperating with the United States Department of Agriculture in the barberry eradication campaign, more than eighteen and one-half million common barberry bushes have been destroyed. Since the beginning of the work in 1918 approximately five and one-half million bushes have been eradicated in Michigan.

The 1931 crop report for this State shows that the average wheat yield per acre was 26 bushels, the highest on record. The loss due to black stem rust was estimated to be less than one-half of one per cent. As the campaign to eradicate barberry bushes progresses the number and severity of stem rust epidemics is gradually diminished. A diagram on the inside of this pamphlet shows by five-year periods the effect the eradication program is having upon losses caused by stem rust.

Although the common barberry is not native to Michigan, it has spread rapidly from hedges and ornamental plantings introduced years ago. To locate and destroy the many scattered bushes economically requires the cooperation of every property owner in this State.

The organizations cooperating in the campaign are the State Department of Agriculture, Michigan State College, the State Department of Public Instruction, The Conference for the Prevention of Grain Rust with headquarters in Minneapolis, Minnesota, and the Division of Barberry Eradication of the Bureau of Plant Industry, United States Department of Agriculture.

For further information regarding the control of stem rust write to the Barberry Eradication Office, East Lansing, Michigan. Use the same address when reporting the location of common barberry bushes or badly rusted fields of grain.

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DIVISION OF
BARBERRY ERADICATION

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WASHINGTON, D. C.



Reply to:
University Farm
St. Paul, Minnesota

Dear Teacher:

In all probability the pupils in your school have heard about common barberry and its relationship to black stem rust of wheat, oats, barley and rye. Some of them may have won medals for finding locations of these bushes. During the spring, summer and fall children often come across common barberries in wooded areas, along streams or fence rows.

To encourage your pupils to report the bushes they find we would appreciate having you call to their attention the enclosed poster showing a picture of the medal the Conference for the Prevention of Grain Rust awards to children for finding new locations of these rust-spreading bushes.

The cooperation you have given in this stem rust control work is very much appreciated.

Very truly yours,

A handwritten signature in cursive script that reads "Leonard W. Melander".

Leonard W. Melander
Barberry Eradication
Leader in Minnesota

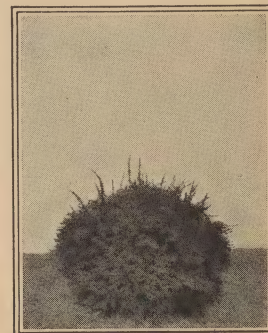
Enclosure



Common Barberry

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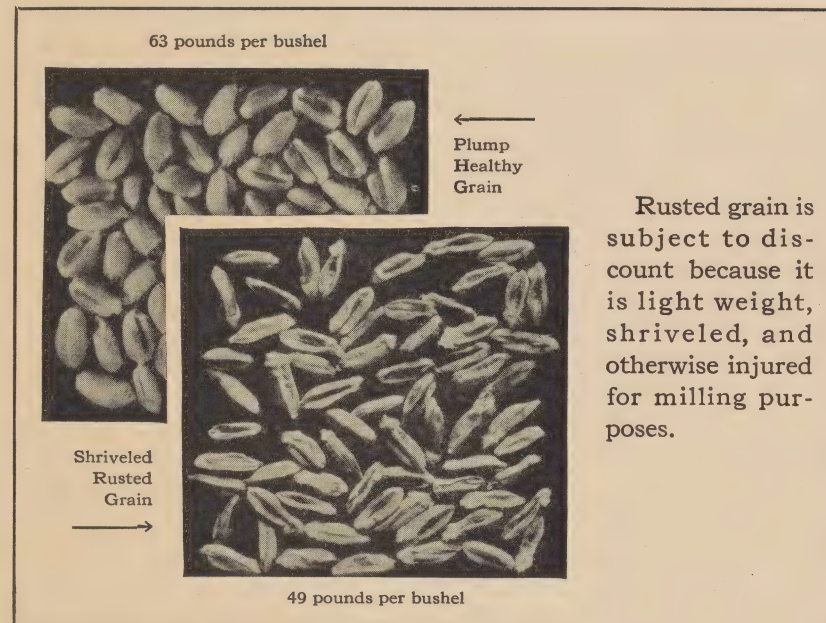


Japanese Barberry

STEM-RUST CONTROL REQUIRES BARBERRY ERADICATION

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Birds and other agencies have scattered the seed until barberry bushes may be found in woodlots, along stream banks and fence rows, and on other uncultivated land



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REPORT *the* LOCATION of COMMON BARBERRY BUSHES *to your* STATE AGRICULTURAL COLLEGE

BARBERRY ERADICATION IN MINNESOTA - 1931.

The eradication of common barberry bushes is an essential part of the program to control black stem rust of wheat, oats, barley and rye. Since 1918 the United States Department of Agriculture has been cooperating with agricultural organizations in thirteen of the North-Central and Western States in an attempt to reduce the number and severity of stem rust epidemics. Common barberry bushes are the principal source of early stem rust infection in the northern part of the United States.

During the past season an intensive search was made for barberry in Dakota and parts of Rice and Goodhue Counties. Approximately 4,000 bushes and seedlings were found and destroyed. Since the beginning of the campaign 868,645 bushes and seedlings have been destroyed in Minnesota.

The common or European barberry is not one of the shrubs native to Minnesota. It was introduced into this State for ornamental and hedge purposes years ago. Once it became established the seed was scattered to woodlots, fence rows and other uncultivated lands by birds and other agencies. As the number of bushes increased stem rust epidemics became more numerous and destructive, further emphasizing the necessity for some practical control measure.

Since 1918 most of the old planted hedges in Minnesota have been destroyed but to clean up the thousands of so-called wild bushes will require the active cooperation of many property owners in the State. For this reason the Department of Agriculture and independent agencies cooperating in the campaign are giving particular attention to an informational program intended to provide an opportunity for the public to become acquainted with the common barberry and its relation to the development of stem rust.

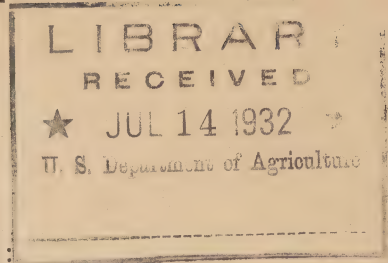
During 1931 demonstrations were placed at the Minnesota State Fair and seven county fairs for the purpose of illustrating the damage stem rust does to small grains and how the disease may be controlled. More than 3,000 boys and girls gathered at club camps were shown the distinguishing characteristics of the rust-spreading barberry and instructed in rust control measures. Agents of the Department of Agriculture are assisting weed inspectors in Minnesota to identify and eradicate common barberry bushes. The cooperation given by more than 16,000 weed inspectors located in seventeen southwestern Minnesota counties is materially aiding the progress of barberry eradication in this state. These men are giving the same attention to the eradication of barberry that is given to other noxious weeds in their communities.

As shown on the following page, a decided reduction has been made in the annual loss from stem rust since the barberry eradication campaign was begun in 1918. To insure future protection from the disease, however, the scattered bushes remaining in the State must be located and destroyed. The ultimate success of the campaign depends upon the active interest of property owners and children in reporting known locations of barberry bushes or badly rusted grain fields. During the past few years children of school age have taken an active part in the stem rust control program. The interest of children in finding barberry is greatly stimulated by the fact that the Conference for the Prevention of Grain Rust with headquarters in Minneapolis, Minnesota, offers a medal to any boy or girl reporting heretofore unknown locations of these bushes. To date fifty-eight children in Minnesota have qualified for medals.

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UNITED STATES DEPARTMENT OF AGRICULTURE
BUREAU OF PLANT INDUSTRY
COOPERATING WITH
STATE AGRICULTURAL AND OTHER AGENCIES
IN THE ERADICATION OF THE COMMON BARBERRY
WASHINGTON, D. C.

DIVISION OF
BARBERRY ERADICATION



Reply to:
Barberry Eradication Office
State College
Bozeman, Montana

Dear Teacher:

The reading time of this pamphlet is $3\frac{1}{2}$ minutes.

As your school is one of the 600 visited by agents of the Department of Agriculture during the past two years, the project to control black stem rust of small grains perhaps needs little introduction.

It is hoped that you will find time to review the subject for your pupils, thereby keeping alive their interest in the eradication program. The Conference for the Prevention of Grain Rust is continuing to present badges and certificates to children reporting common barberry bushes.

This pamphlet, which contains a brief summary of the progress being made in barberry eradication, is sent with a sincere appreciation of your cooperation. Further information or materials will be gladly furnished upon request.

Very truly yours,

H. E. Morris

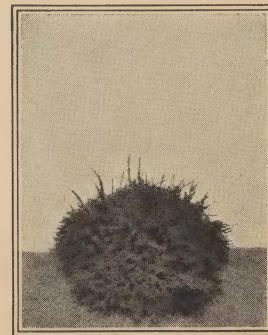
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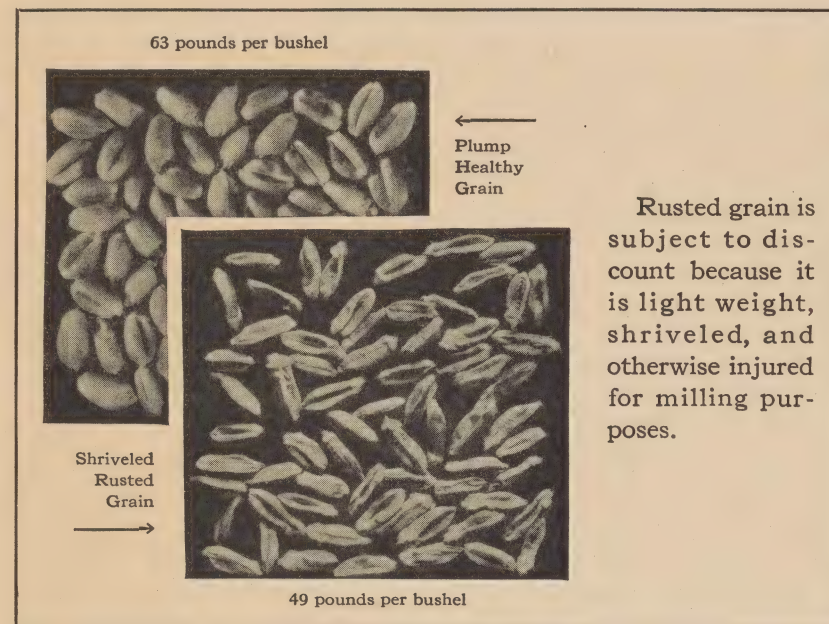


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STATE OF MONTANA

SUMMARY OF ACTIVITIES

1931

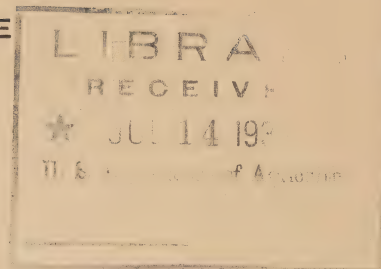
BARBERRY ERADICATION

PURPOSE	The purpose of the barberry eradication campaign is to control black stem rust, a serious disease of wheat, oats, barley, and rye. This campaign, supervised by the United States Department of Agriculture, is being conducted in Montana and twelve other North Central wheat-producing States.
COOPERATION	Prominent among the organizations taking an active interest in barberry eradication in Montana are the Conference for the Prevention of Grain Rust, Minneapolis, Minnesota, State Agricultural College, Experiment Station, Extension Division, State Department of Agriculture and the State Department of Public Instruction.
SURVEY & BUSHES	Survey to locate and destroy common barberry bushes during 1931 was conducted in portions of Flathead, Lake and Missoula Counties with some reinspection work being done in localized areas in other parts of the State. Bushes, sprouting bushes and seedlings were located on 28 properties with approximately 10 bushes to each location. The survey in the three counties named above was devoted largely to cleaning up areas where bushes were known to be growing wild in native timber and along the lake shore.
SCHOOLS	A medal badge furnished by the Conference for the Prevention of Grain Rust and a certificate signed by the Governor of the State are awarded to each school child who finds and reports common barberry bushes. During the past year an agent of the Department of Agriculture visited every school in Sheridan, Fergus and Judith Basin Counties to assist teachers in presenting the facts regarding stem rust control. The development of stem rust is typical of many other fungous diseases of economic crops and the subject proves extremely interesting to children of school age.
RUST & LOSSES	It is true that in some sections of Montana black stem rust is not a disease of serious economic importance. Yet in the eastern half of the State this disease has time and again taken its toll of the small grain crops. Barberries and stem rust know no boundary lines. Therefore, all these bushes are being destroyed in the geographical unit known as the North-Central wheat States. The object of the campaign in Montana is not only to reduce current rust losses but to prevent further spread of common barberry bushes which would result in future stem rust losses.
YOU	Your cooperation in reporting bushes will be of direct value to the project and to your community. To report barberry bushes or obtain more information write to the address below.
ADDRESS	BARBERRY ERADICATION OFFICE, STATE COLLEGE, BOZEMAN, MONTANA.

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P6917S

UNITED STATES DEPARTMENT OF AGRICULTURE
BUREAU OF PLANT INDUSTRY
COOPERATING WITH
STATE AGRICULTURAL AND OTHER AGENCIES
IN THE ERADICATION OF THE COMMON BARBERRY
WASHINGTON, D. C.

DIVISION OF
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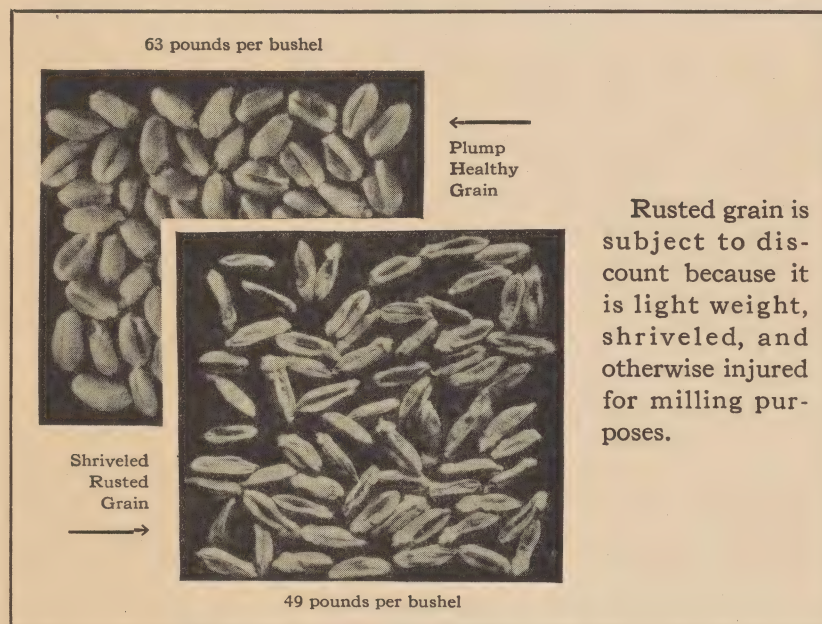


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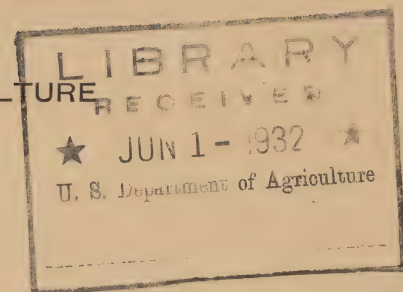
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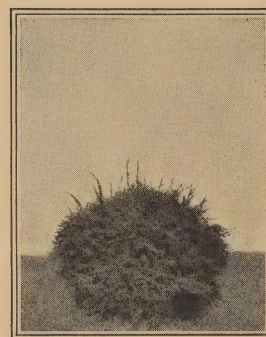
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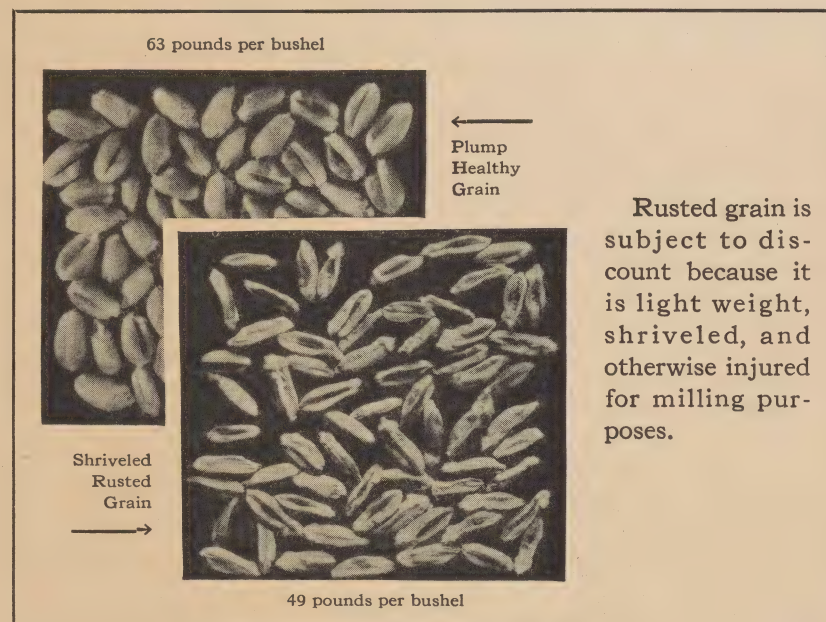


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PROGRESS OF BARBERRY ERADICATION IN NEBRASKA

The result of past accomplishments in barberry eradication as a means of reducing losses from stem rust is encouraging. More than 18,000,000 of these rust-spreading bushes have been found and destroyed in the thirteen States engaged in the work. Nebraska alone has contributed over 141,000 of this number. Losses from stem rust have shown a decided reduction as graphically illustrated on the inside of this sheet. However, there are enough barberries remaining in this and surrounding States to start an epidemic of stem rust which, under favorable weather conditions, might cause severe damage to small grain crops.

In recent years property owners and school children throughout the principal spring wheat-growing States have taken an active interest in the campaign to control stem rust. Many barberry bushes have been voluntarily reported to Agricultural Colleges and other agencies cooperating in the eradication work. Educational institutions from the grade schools to colleges and universities, through classroom instruction, have materially aided in bringing about a more general understanding of the relationship of the common barberry to black stem rust. The ultimate success of efforts to reduce rust losses will depend upon the continued interest of the public.

Investigational activities are an important part of the campaign in Nebraska. Knowledge regarding the first appearance of stem rust in the spring or early summer often leads to the location of responsible barberry bushes. By determining the particular forms of the rust most prevalent in restricted areas, some indication may be obtained as to whether near-by barberry bushes are responsible for the rust or it has been carried for some distance by the wind. Experiments dealing with methods of eradicating barberry bushes by the use of chemicals produced results which have made eradication more efficient and economical.

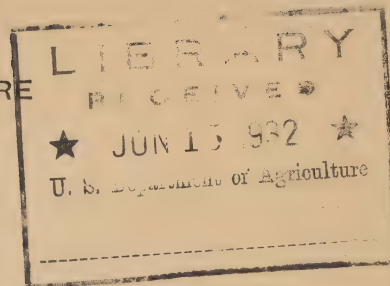
One of the difficult problems of the eradication program in Nebraska is to find and destroy existing bushes more economically. As the program progresses more time and money are required to locate those remaining. Many bushes are being reported by residents of the State; others are being found by tracing severe rust epidemics to the source of infection. Further cooperation from property owners and children in reporting either barberry bushes or badly rusted grain fields will be appreciated.

Every citizen of this State is urged to feel the responsibility of looking for and reporting common barberry bushes. A fine bronze medal furnished by the Conference for the Prevention of Grain Rust and a certificate of award will be presented to any boy or girl who finds and reports a location of barberries. Reports should be mailed to the Barberry Eradication Office, College of Agriculture, Lincoln, Nebraska.

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BUREAU OF PLANT INDUSTRY
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STATE AGRICULTURAL AND OTHER AGENCIES
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WASHINGTON, D. C.

DIVISION OF
BARBERRY ERADICATION



Reply to:
Box 1777
Post Office Building
Fargo, North Dakota

Dear Merchant:

As you participate in the 32nd annual convention of the North Dakota Retail Merchants Association, know that those connected directly or indirectly with the barberry eradication campaign to control black stem rust appreciate the cooperation your organization has given during the past five years.

Hoping for the continuance of this happy relationship, it is my pleasure to present for your information this brief summary of the progress made in the campaign in North Dakota during 1931.

I shall be glad to furnish any further information that you may desire.

Very truly yours,

A handwritten signature in dark ink, reading "George C. Mayoue". The signature is written in a cursive style with a large, prominent "G" and "M".

George C. Mayoue
District Leader #1
Barberry Eradication



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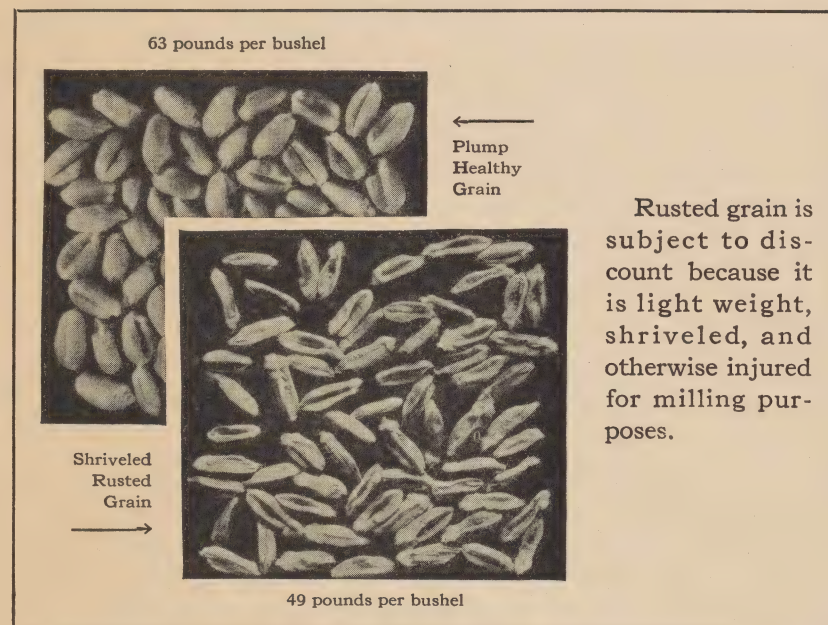


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STATE OF NORTH DAKOTA

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COOPERATION Prominent among the organizations taking an active interest in barberry eradication in North Dakota are the Conference for the Prevention of Grain Rust, Minneapolis, Minnesota; Greater North Dakota Association; State Agricultural College; Experiment Station; Extension Division; North Dakota Retail Merchants Association; State bankers and the State Department of Public Instruction.

SURVEY Sargent County and portions of McIntosh, Dickey, Sheridan and Pembina were carefully surveyed for barberry bushes in 1931.

BUSHES Destruction of 759 bushes, seedlings and sprouting bushes during the past year brought North Dakota's total since 1918 to 29,363. Approximately one-half of all the common barberry bushes destroyed during the past year were found directly or indirectly through the activities of school children who are members of the National Rust Busters Club.

SCHOOLS A medal badge furnished by the Conference for the Prevention of Grain Rust and a certificate signed by the Governor of the State are awarded to each school child who finds and reports common barberry bushes. An agent of the United States Department of Agriculture assisted the teachers in every school in the five counties of Burleigh, Richland, Morton, Grant and Kidder to present the facts regarding stem rust control to their pupils. The development of black stem rust is typical of many other fungous diseases of economic crops and the subject proves extremely interesting to children of school age.

RUST LOSSES The occurrence of stem rust in North Dakota is studied each year. Many bushes have been found by pre-determining their location through the study of local rust spreads. Official estimates placed North Dakota's 1931 wheat losses from stem rust at only a trace.

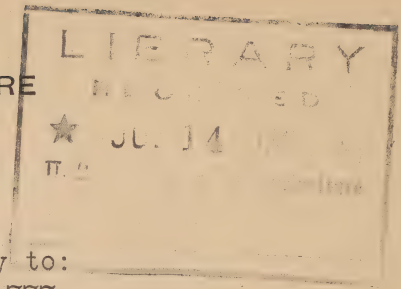
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P69175

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DIVISION OF
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Reply to:
Box 1777
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Bulletin to Member of
Greater North Dakota Association
And Others:

The reading time of this pamphlet is 4 minutes.

To the Greater North Dakota Association is due credit for much of the public support now being given to the Barberry Eradication campaign to control black stem rust. In keeping with the organization's agricultural program, your officers have aided in promoting a better understanding of the principles and methods involved in the program.

These efforts have been rewarded by both legislative appropriations and closer cooperation with the public.

Not only we who work directly in the State appreciate the true value of these activities. The Washington officials directing this project over the area of 13 States are keenly aware of your organization's part in keeping alive the spirit of cooperation so vital to the success of any such enterprise.

This pamphlet is sent with the hope that it will provide you with an interesting summary of the past year's work.

Very truly yours,

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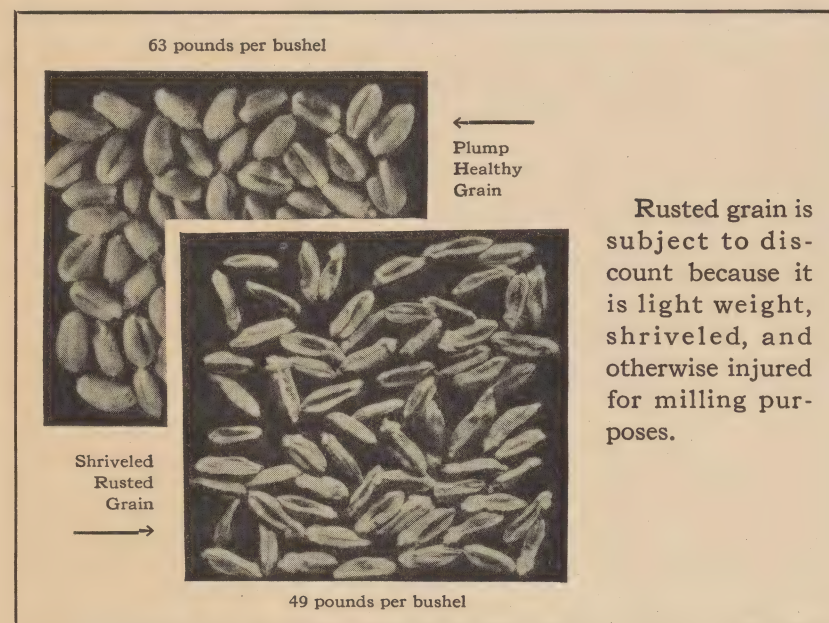


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COOPERATION Prominent among the organizations taking an active interest in barberry eradication in North Dakota are the Conference for the Prevention of Grain Rust, Minneapolis, Minnesota; Greater North Dakota Association; State Agricultural College; Experiment Station; Extension Division; North Dakota Retail Merchants Association; State bankers and the State Department of Public Instruction.

SURVEY Sargent County and portions of McIntosh, Dickey, Sheridan and Pembina were carefully surveyed for barberry bushes in 1931.

BUSHES Destruction of 759 bushes, seedlings and sprouting bushes during the past year brought North Dakota's total since 1918 to 29,363. Approximately one-half of all the common barberry bushes destroyed during the past year were found directly or indirectly through the activities of school children who are members of the National Rust Busters Club.

SCHOOLS A medal badge furnished by the Conference for the Prevention of Grain Rust and a certificate signed by the Governor of the State are awarded to each school child who finds and reports common barberry bushes. An agent of the United States Department of Agriculture assisted the teachers in every school in the five counties of Burleigh, Richland, Morton, Grant and Kidder to present the facts regarding stem rust control to their pupils. The development of black stem rust is typical of many other fungous diseases of economic crops and the subject proves extremely interesting to children of school age.

RUST LOSSES The occurrence of stem rust in North Dakota is studied each year. Many bushes have been found by pre-determining their location through the study of local rust spreads. Official estimates placed North Dakota's 1931 wheat losses from stem rust at only a trace.

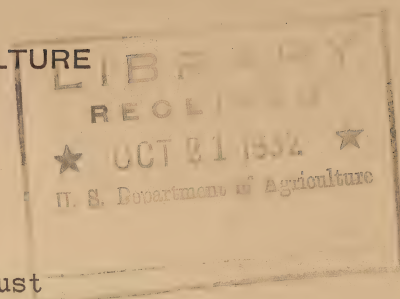
YOU Your cooperation in reporting bushes will be of direct value to the project and to your community. To report bushes or obtain more information write to the address below.

ADDRESS BARBERRY ERADICATION OFFICE, POST OFFICE BUILDING, FARGO, N.D.

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Pg 9175

UNITED STATES DEPARTMENT OF AGRICULTURE
BUREAU OF PLANT INDUSTRY
COOPERATING WITH
STATE AGRICULTURAL AND OTHER AGENCIES
IN THE ERADICATION OF THE COMMON BARBERRY
WASHINGTON, D. C.

DIVISION OF
BARBERRY ERADICATION



Outline for the Study of Black Stem Rust

Harry Atwood, Agent
In Charge of Barberry Eradication
in Ohio

Black stem rust is a typical and outstanding example of a crop disease caused by one of the group of tiny parasitic plants called fungi. Parasitic fungi have no leaves and cannot manufacture their own food. For this reason they must depend for their living upon other growing plants.

The plant parasite which causes black stem rust is known as Puccinia graminis. There are three distinct stages in the life cycle of this fungus, one of which occurs on the leaves of the common barberry bush. The thick walled spores (reproductive cells) of the fungus live over winter in a dormant state on old straw or stubble and on many of the wild grasses. In the spring when the weather becomes moist and warm these overwintering spores germinate, producing small colorless spores (sporidia). The sporidia can do no harm if carried by the wind to grains or grasses for they can attack only the leaves of the common barberry. If by chance they fall upon barberry leaves and the weather conditions are favorable they will grow producing the cluster cup stage of the rust. If the spores produced in these cluster cups on the lower side of the barberry leaves are carried by the wind back to wheat, oats, barley or rye, the red or summer stage of the disease develops. As the season progresses the red or repeating stage of the rust spreads rapidly from field to field until the grain begins to mature when the black or winter spores again appear on the stems, completing the annual life of the disease.

Because the red spores cannot survive cold winters, the common barberry is essential in the Northern States as a spring host in the life cycle of black stem rust.



Common Barberry

The common barberry (*Berberis vulgaris* L.) and many closely related varieties harbor stem rust of small grains and should be destroyed.

The Japanese barberry (*Berberis thunbergii* DC.) and closely related varieties are widely used in lawns and gardens for hedge and other decorative purposes. They are immune to rust and may be planted where desired without endangering small-grain crops.

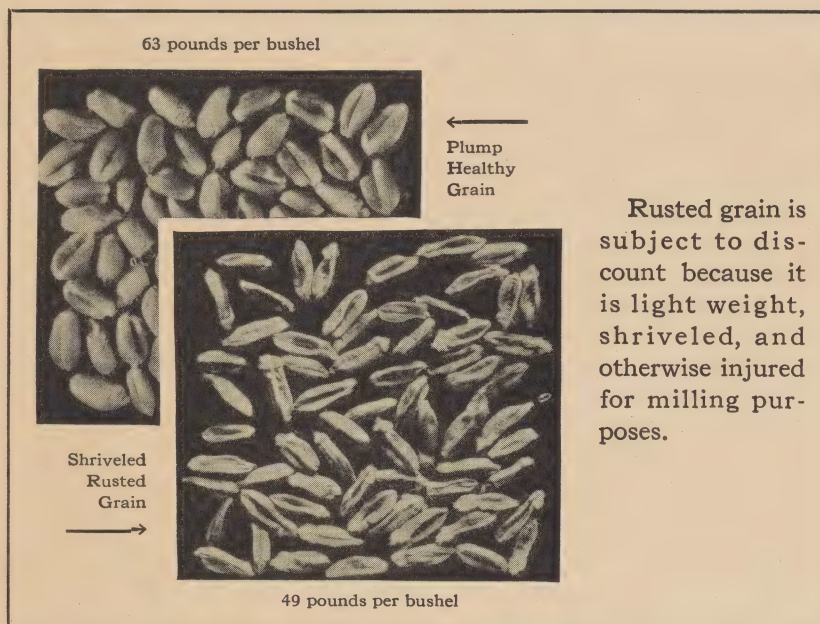


Japanese Barberry

STEM-RUST CONTROL REQUIRES BARBERRY ERADICATION

HOW STEM RUST REDUCES YIELD PER ACRE AND AFFECTS QUALITY OF GRAIN

Stem rust appears on barberry during early spring months, later spreads to near-by wheat, oats, barley, and rye, steals the plant food and weakens the straw



Stem rust losses
decrease as
barberry eradication
progresses

57,704,000
bushels of wheat

Average annual loss
five-year period
1916-1920

17,867,000
bushels of wheat

Average annual loss
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9,609,000
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destroyed in 13 North-
Central States
since 1918

WHERE COMMON BARBERRY BUSHES ARE FOUND AND HOW TO ERADICATE THEM

Common barberry bushes were originally planted as hedges
and ornamental shrubs



Birds and other agencies have scattered the seed until barberry bushes may be found in woodlots, along stream banks and fence rows, and on other uncultivated land



Crushed rock salt carefully applied to the crown of the root is an effective means of eradication

All common barberry bushes in the north-central part of the United States should be destroyed to prevent rust epidemics

REPORT *the* LOCATION of COMMON BARBERRY BUSHES to your STATE AGRICULTURAL COLLEGE

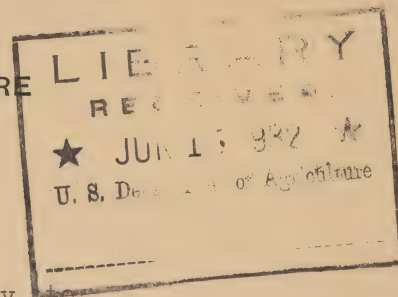
Draw and label a diagram of the life cycle of Black Stem Rust.

Describe briefly each stage of the above life cycle.

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DIVISION OF
BARBERRY ERADICATION



Reply to:

Division of Barberry Eradication
Room 304, 8 East Broad Street
Columbus, Ohio

Dear Sir:

This leaflet brings to you a brief review of the progress being made in stem rust control through the eradication of common barberry bushes.

The fact that one stage in the annual life of the stem rust fungus is spent on the leaves of the common barberry was definitely established years ago. Since then it has been demonstrated many times that the eradication of these bushes will decrease the number and severity of stem rust epidemics. Many common barberry bushes have been destroyed in Ohio since 1918 and stem rust epidemics are becoming noticeably fewer and less severe. However, at the present time these bushes are growing wild in many communities in the State and the seed, scattered by birds and other agencies, adds to the further distribution of the shrub.

The United States Department of Agriculture is cooperating with agricultural agencies in Ohio in this eradication campaign. The cooperation of property owners throughout the State is needed in order to successfully complete the campaign. Please report all bushes which you think may be common barberry to the Division of Barberry Eradication, Room 304, 8 East Broad Street, Columbus, Ohio.

Very truly yours,

Harry Atwood, Agent
In Charge of Barberry Eradication
in Ohio



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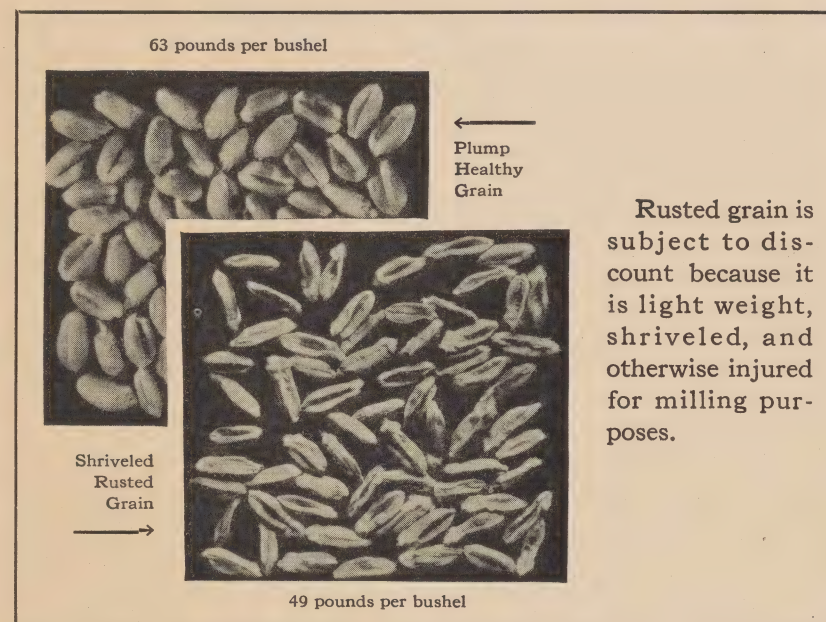


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PROGRESS OF BARBERRY ERADICATION IN OHIO

Ohio farmers lose annually thousands of bushels of wheat oats, barley and rye because of black stem rust. The common or European barberry and several related species and varieties of this shrub harbor the spring stage of the parasitic fungus that causes this disease of small grains. In Ohio epidemics of the disease have been found closely correlated with locations of common barberry.

The purpose of the barberry eradication campaign which is being conducted in the thirteen North-Central States is to reduce the number and severity of destructive stem rust epidemics, thereby improving the quality and stabilizing the yield of small grain crops. The campaign is under Federal supervision and the work in Ohio is on a cooperative basis. The United States Department of Agriculture, the Conference for the Prevention of Grain Rust, Minneapolis, Minnesota, the Ohio State Department of Agriculture, and various other organizations are cooperating in the eradication work.

Common barberries have been found in every Ohio County. Since the inception of the campaign in 1918 more than $2\frac{1}{4}$ million barberry bushes and seedlings have been destroyed. These were found growing on approximately 12,600 different rural and urban properties in the State. Last year 22,732 bushes and seedlings were destroyed on 200 properties in 36 counties.

Agents of the Federal and State Departments of Agriculture carefully surveyed Auglaize, Champaign, Logan and Shelby counties in 1931. In addition to the intensive survey of these four counties, many leads which had been sent to this office concerning the possible location of common barberry bushes were investigated. The leads were furnished by property owners and children throughout the State who had become acquainted with the damaging effect stem rust has on small grains.

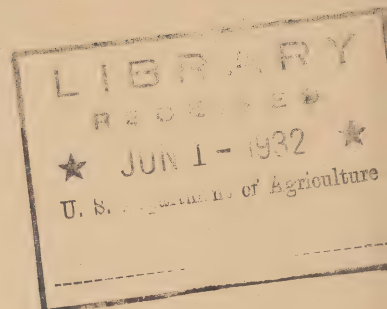
Teachers in rural and city schools have used extensively, in connection with their classroom instruction, literature pertaining to stem rust control. They find it a subject in which children are interested and a study of the disease affords the pupils an opportunity to become acquainted with the facts pertaining to a typical fungous disease of an economic crop.

Some research work is being conducted in Ohio to determine the effectiveness of different chemicals as barberry-killing agents. Several plots have been established to determine the behavior of barberry seed and seedlings under various natural and artificial conditions. Barberry bushes spread more rapidly in some localities than in others, depending upon soil and weather conditions. Seed of the common barberry has been known to lay dormant for five or six years before germinating.

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DIVISION OF
BARBERRY ERADICATION



Dear Friend:

Reply to:
State College Station
Brookings, South Dakota

The shortage of feed for livestock in South Dakota during the past winter months resulted in a critical situation. In some cases stock died from starvation, while in other instances they were in such a weakened condition that recovery was slow. This feed shortage was due very largely to the extreme hot and dry weather during 1931. We know that the weather man is very difficult to handle, but we are reminded that there are other causes for poor crops which can be controlled if the proper measures are applied.

In certain past years black stem rust has destroyed millions of bushels of small grain which also resulted in a shortage of both grain and cash income. Considerable progress has been made toward the reduction of losses from this disease through the eradication of common barberry bushes and by other control measures. However, there are enough barberries growing in South Dakota and surrounding States to cause an epidemic of stem rust which might result in considerable losses to grain growers.

On the inside of this circular you will see some pictures of this rust-spreading bush and on the back page you will find a brief report of the progress of barberry eradication in South Dakota. Your past cooperation has materially aided in ridding the State of this crop pest. By reporting any bushes which you think may be barberries and encouraging others, particularly children, to look for these shrubs, future progress of the work will be greatly benefited.

Very truly yours,

A cursive handwritten signature that reads "Raymond O. Bulger".

Raymond O. Bulger, Agent
Barberry Eradication



Common Barberry

The common barberry (*Berberis vulgaris* L.) and many closely related varieties harbor stem rust of small grains and should be destroyed.

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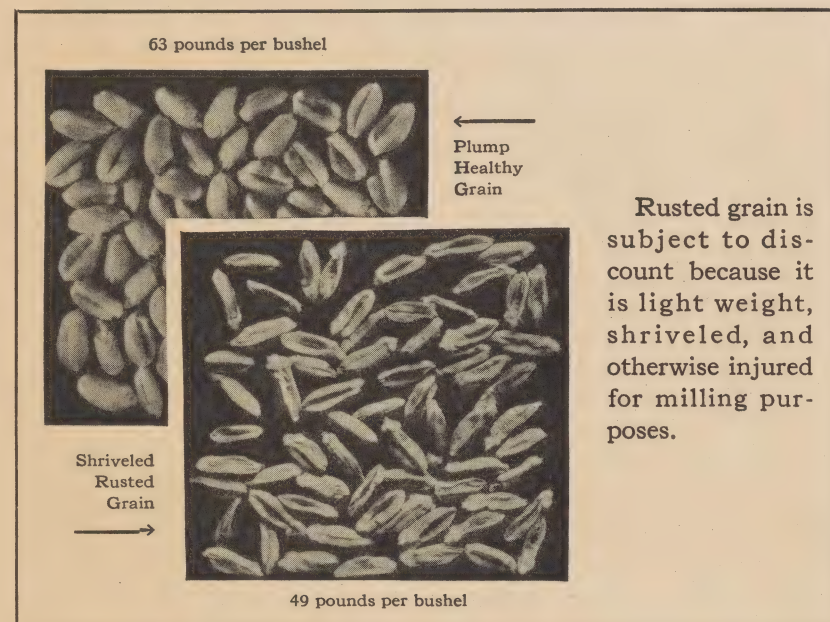


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REPORT the LOCATION of COMMON BARBERRY BUSHES to your STATE AGRICULTURAL COLLEGE

PROGRESS OF BARBERRY ERADICATION IN SOUTH DAKOTA

Encouraging progress is being made in the control of black stem rust by the eradication of common barberry bushes. More than 18,000,000 of these rust-spreading bushes have been found and destroyed in the thirteen States engaged in the work. South Dakota alone has contributed over 134,000 of this number. Losses from stem rust have shown a decided reduction as graphically illustrated on the inside of this sheet. However, there are enough barberries remaining in this and surrounding States to start an epidemic of stem rust which, under favorable weather conditions, might cause severe damage to small grain crops.

In recent years property owners and school children throughout the principal spring wheat-growing States have taken an active interest in the campaign to control stem rust. Many barberry bushes have been reported voluntarily to Agricultural Colleges and other agencies co-operating in the eradication work. Educational institutions from the grade schools to colleges and universities through classroom instruction have materially aided in bringing about a more general understanding of the relationship of the common barberry to black stem rust. The ultimate success of efforts to reduce rust losses will depend upon the continued interest of the public.

Investigational activities are an important part of the campaign in South Dakota. Knowledge regarding the first appearance of stem rust in the spring or early summer often leads to the location of responsible barberry bushes. By determining the particular forms of the rust most prevalent in restricted areas some indication may be obtained as to whether the near-by barberry bushes are responsible for the rust or it has been carried for some distance by the wind. Experiments dealing with methods of eradicating barberry bushes by the use of chemicals produced results which have made eradication more efficient and economical.

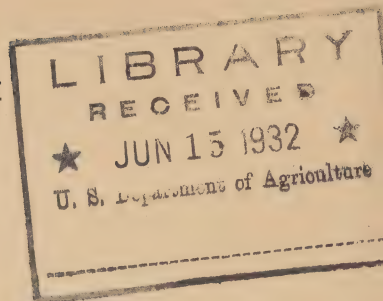
One of the difficult problems of the eradication program in South Dakota is to find and destroy existing bushes more economically. As the program progresses more time and money are required to locate those remaining. Many bushes are being reported by residents of the State; others are being found by tracing severe rust epidemics to the source of infection. Further cooperation from property owners and children in reporting either barberry bushes or badly rusted grain fields will be appreciated.

Every citizen of this State is urged to feel the responsibility of looking for and reporting the common barberry. A fine bronze medal furnished by the Conference for the Prevention of Grain Rust and a certificate of award signed by the Honorable Governor Warren E. Green will be presented to any boy or girl who finds and reports a location of common barberry bushes. Reports should be mailed to the Barberry Eradication Office, State College Station, Brookings, South Dakota.

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UNITED STATES DEPARTMENT OF AGRICULTURE
BUREAU OF PLANT INDUSTRY
COOPERATING WITH
STATE AGRICULTURAL AND OTHER AGENCIES
IN THE ERADICATION OF THE COMMON BARBERRY
WASHINGTON, D. C.

DIVISION OF
BARBERRY ERADICATION



Reply to:
State Capital Annex
Madison, Wisconsin

To the Librarian:

This pamphlet contains a brief report of the progress made during 1931 in the campaign to eradicate common barberry in Wisconsin.

Every property owner in the State has a direct or indirect interest in the barberry eradication campaign. As the areas heavily infested with barberry are gradually eliminated the satisfactory completion of the task depends more and more on the general public learning to know common barberry and reporting the scattered bushes.

Your cooperation in placing this report on the list of newly-acquired articles and bringing it to the attention of your library patrons will be greatly appreciated.

Very truly yours,

Vern O. Taylor

Vern O. Taylor
Agent in Charge
Barberry Eradication
in Wisconsin.



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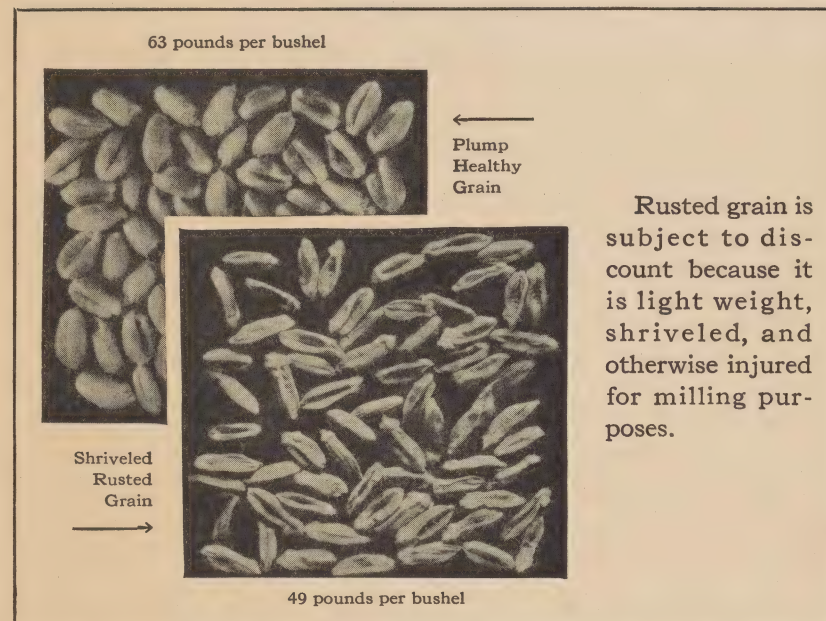


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BARBERRY ERADICATION IN WISCONSIN - 1931.

Black stem rust of small grains is the most destructive plant disease with which the grain farmer has to contend. In the North-Central part of the United States the principal source of this disease is the common or European barberry on which the fungus begins its growth each spring. A campaign to eradicate common barberry bushes in Wisconsin and twelve other upper Mississippi Valley States was begun in 1918. While the early work served to destroy the original planted bushes it also proved that barberry had escaped cultivation and was growing wild in many places. An intensive search of large areas is necessary in order to find and destroy these scattered bushes.

All of the small grains are attacked by black stem rust but in this State the greatest damage occurs in oat fields. Farmers in Wisconsin lose more than a million dollars a year as a result of this disease and barberry eradication offers the most practical means of reducing these losses. However, other means of control should not be overlooked. Cultural practices which will hasten the ripening of the crop should be considered. Low lands should be avoided and rust-resistant varieties of grain selected for seed when such varieties are otherwise adapted to local conditions.

During the field season of 1931 survey for common barberry was conducted in the counties of Dane, Dodge, Grant, Green Lake, Iowa and Ozaukee, with a small amount of work being done in Sauk and Columbia Counties. More than ninety-two tons of salt were used in the eradication of 60,600 barberry bushes and seedlings. Since 1918 more than 5,000,000 rust-spreading barberries have been destroyed in Wisconsin and approximately 18,500,000 in the thirteen States of the eradication area.

The drought of the past season resulted in unfavorable weather conditions for rust development. The greatest damage occurred in fields of late oats. It is estimated that 1.5 per cent of the entire oat crop was lost as a result of stem rust. Several fields of wheat were badly damaged but in each case the rust was local and directly traceable to near-by barberry. Barley and rye escaped serious infection. Rust studies are made each year in an effort to determine the exact source of stem rust in Wisconsin. Orange leaf rust on wheat did a little damage this year, but no loss to other grain crops could be attributed to this disease.

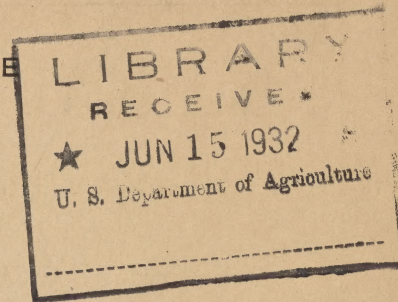
Funds for barberry eradication are furnished chiefly by Federal appropriation. The State Department of Agriculture and Markets supplies a smaller appropriation and office facilities for the local leader in charge of the work. The College of Agriculture of the University of Wisconsin and the State Farm Bureau lend material aid to the campaign. Valuable informational materials including pamphlets, circulars and charts are furnished by the Conference for the Prevention of Grain Rust, an organization of agricultural leaders and business men with headquarters in Minneapolis, Minnesota.

Barberry eradication is proving a practical means of protecting grain crops from black stem rust. If these bushes are allowed to grow unmolested they spread with astonishing rapidity and the task of eradication becomes proportionally more difficult. It should be remembered that only the common or European barberry harbors the stem rust fungus. The low-spreading Japanese barberry is harmless and should not be destroyed. The difference in growth habit is shown in this pamphlet.

P 6917 S

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WASHINGTON, D. C.

DIVISION OF
BARBERRY ERADICATION



Reply to:
Agricultural College
Fort Collins, Colorado

Dear Sir:

The United States Department of Agriculture is cooperating with the State Agricultural Colleges and other agencies in Colorado and Wyoming in a program for the control of black stem rust of cereal crops. On the back page of this pamphlet you will find a brief report of the progress that has been made in the barberry eradication campaign since the work began in 1918.

Black stem rust develops on the common barberry early in the spring and from it spreads to the small grain crops. During the growing season the rust appears on the stems of the grains as small, brick-red spots. This fungous disease steals the plant food and weakens the straw, resulting in greatly reduced yields and poor quality grain.

Learn to know the common barberry and if you find bushes, report them to your County Agent, Smith-Hughes teacher or the District Barberry Eradication Office at Fort Collins, Colorado.

Very truly yours,

A handwritten signature in cursive script that reads "Ernest A. Lungren".

District Leader
Ernest A. Lungren
Barberry Eradication #3



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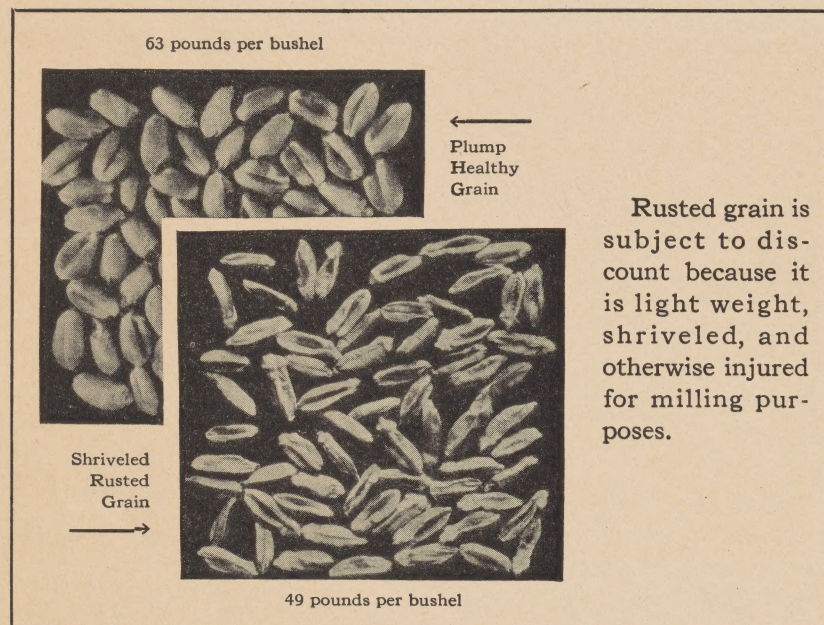


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PROGRESS OF BARBERRY ERADICATION IN DISTRICT NO. 3 - 1931.

The common barberry is an erect-growing shrub averaging five to six feet in height; the leaves grow in clusters along the branches, have saw-toothed edges and may be either green or purple in color. At the base of each cluster of leaves there are three or more sharp spines. The bark is gray, inner bark yellow and the berries, borne similar to currants, are a bright red when matured. Care should be taken not to confuse the Japanese barberry which is immune to rust with the harmful varieties. The Japanese barberry is a low, gracefully-spreading shrub used extensively in lawns and gardens for decorative purposes.

In the States of Colorado and Wyoming more than 63,000 common barberry bushes have been destroyed. Since 1918 when the first organized efforts were begun to reduce the number and severity of local stem rust epidemics, losses from this disease have gradually diminished. On the inside of this pamphlet is a diagram showing by five-year periods the effect barberry eradication is having upon the prevalence and destructiveness of stem rust.

The common or European barberry is not native to the United States but wherever it has been planted birds have scattered the seed. The result is that these bushes may now be found in woodlots, along fence rows or streams and on other uncultivated lands. Practically all of the planted bushes in the States comprising the barberry eradication area have been destroyed. However, in many localities, including some in Colorado and Wyoming scattered bushes may be found growing in out-of-the-way places. To locate the remaining barberries economically requires the assistance of grain growers and other property owners. Complete eradication of the rust-spreading barberry is necessary if future crops are to be protected from stem rust.

To stimulate interest of children in the eradication program, the Conference for the Prevention of Grain Rust, Minneapolis, Minnesota, is offering a medal to any boy or girl who finds and reports the location of a common barberry bush. Information pertaining to badly rusted grain fields often proves valuable as such reports may lead to finding the bushes responsible for the rust infection.

During the past year many boys in Smith-Hughes and rural schools who have studied about stem rust and barberry in their classrooms have reported the presence of rust in their fathers' grain fields and in some instances have found and reported locations of barberry bushes. Such a large percentage of the people throughout the small grain growing States are interested in the control of black stem rust that many schools now include a study of barberry and black stem rust in their regular classroom instruction.

If you are troubled with stem rust in your grain or if you wish further information regarding the campaign, write to the District Barberry Eradication Office, Agricultural College, Fort Collins, Colorado.